

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE**

HEARING CHARTER

Scientific and Technical Advice for the U.S. Congress

**Tuesday, July 25, 2006
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building**

1. Purpose

On Tuesday, July 25, 2006, the Committee on Science of the U.S. House of Representatives will hold a hearing to examine how Congress receives advice about science, and whether and how the mechanisms for providing that advice need to be improved.

2. Witnesses

Panel 1

The Honorable Rush Holt is the Representative from the 12th District of New Jersey.

Panel 2

Dr. Peter Blair is the Executive Director of the Division on Engineering and Physical Sciences at the National Academy of Sciences. He previously served as Assistant Director of the Office of Technology Assessment.

Dr. Catherine Hunt is the President-elect of the American Chemical Society and the Leader for Technology Partnerships (Emerging Technologies) at the Rohm and Haas Company. She is a member of the Executive Board of the Council for Chemical Research.

Dr. Jon Peha is a professor in the Departments of Engineering and Public Policy and Electrical and Computer Engineering at Carnegie Mellon University. He also was the co-editor with M. Granger Morgan of *Science and Technology Advice for Congress*, a compilation of policy papers evaluating existing systems and providing recommendations for science and technology advice for the legislative branch.

Dr. Al Teich is the Director of Science and Policy Programs at the American Association for the Advancement of Science (AAAS). He is also the author of *Technology and the Future*, a collection of papers on how technology and society interact.

3. Overarching Questions

The hearing will address the following overarching questions:

1. What resources are available to Congress to provide scientific and technical advice or assessments? How does Congress use these resources?
2. What are the strengths and weaknesses of the current system through which Congress receives scientific and technical advice? Overall, does the current system effectively meet Congress' needs, or do gaps exist?
3. What options are available to supplement or improve existing resources to provide advice and assessments on scientific or technical issues?

4. Brief Overview

- Congress currently receives information and advice on science and technology issues from, among others, the National Academy of Sciences (NAS) and the Congressional Research Service (CRS), science and engineering professional societies, interest groups and think tanks. Additionally, some Congressional offices employ staff with scientific backgrounds.
- From 1972 to 1995, the Office of Technology Assessment (OTA), a Congressional support office, prepared reports at Congressional request on science and technology issues. In 1995, funding for OTA was eliminated.
- Reports from scientific groups and experts released in recent years have criticized the lack of a dedicated source of scientific and technical advice and assessment for Congress. They argue that the resources currently available do not always provide Congress with in-depth analysis, including analysis of multiple policy options, in a form and on a schedule that is useful to legislators.
- Congressional advocates of creating (or recreating) a Congressional entity for science advice responded to this criticism, in part, by creating a pilot project within the Government Accountability Office (GAO) to provide advice on specific issues. The Legislative Branch appropriation in fiscal years 2002-2004. GAO has completed four assessments as a result – one each on biometrics, cybersecurity, wildland fires and cargo security.
- Advocates of an expanded scientific and technical assessment capability to support the Legislative Branch have proposed several options, including: (1) augmenting the capabilities of existing Congressional agencies, (2) expanding the use of the National Academy of Sciences, (3) increasing the number of privately-sponsored Congressional science and engineering fellows, (4) establishing a small Congressional office that would farm Members' requests for information out to expert non-governmental organizations, or (5) chartering an non-governmental organization dedicated to providing science advice and technology assessment for Congress.

5. Background

History of the Office of Technology Assessment

Congress created the Office of Technology Assessment (OTA) in 1972 to aid Congress “in the identification and consideration of existing and probable impacts of technological application.”¹ All technology assessments conducted by the office were approved by the Technology Assessment Board, a bipartisan body made up of six Senators and six Representatives. Assessments could be requested by a committee chair, the ranking minority member of a committee, the majority of members in a committee, the Technology Assessment Board, or the director of OTA.

Funding for OTA was eliminated in 1995 as part of an effort to reduce size of the federal budget and the Congressional budget and bureaucracy. Proponents of eliminating OTA also argued that that OTA reports took over a year to complete (as do many National Academy reports) and, therefore, were not available to legislators in a timeframe that was useful to them, and that Congress would be able to obtain similar advice from NAS, CRS, and GAO. Also, some Members felt that some of the reports produced by OTA were not pertinent to the legislative agenda or reflected a political bias.

GAO pilot program in technology assessments

The Fiscal Year 2002 (FY2002) Legislative Branch Appropriations Conference Report allocated \$500,000 to GAO to conduct a study as part of a pilot project in technology assessment. The resulting report, released in November 2002, was entitled *Using Biometrics for Border Security*.² FY2003 and FY2004 appropriations reports contained similar allocations, and GAO completed another technology assessment in May 2004 — *Cybersecurity for Critical Infrastructure Protection*.³ GAO completed the pilot project with two other technology assessments — *Protecting Structures and Improving Communications during Wildland Fires*, released in 2005, and *Securing the Transport of Cargo Containers*, released in 2006.

In addition to providing funds for these pilot technology assessments, Congress requested two reviews of the pilot project’s performance. Overall, the external review, completed in 2002, reflected very favorably on GAO’s performance. The reviewers found that GAO did a “very good job” given the constraints — a very short timescale for the assessment and no previous experience with conducting technology assessments. However, the reviewers also noted that GAO has few staff with adequate knowledge and experience of broad scientific and technical issues necessary to evaluate a range of policy options.

¹ OTA was created by the Technology Assessment Act of 1972 (PL 92-484).

² *Using Biometrics for Border Security*, Report GAO-03-174, is available on line at <http://www.gao.gov/new.items/d03174.pdf>.

³ *Cybersecurity for Critical Infrastructure Protection*, Report GAO-04-321, is available on line at <http://www.gao.gov/new.items/d04321.pdf>.

6. Proposals for Improving Science Advice to Congress

Over the past several years, numerous proposals have been offered for improving Congress' access to science advice and technology assessment through legislation and policy recommendations. Bills to directly reestablish the Office of Technology Assessment were introduced in the 107th and 108th Congresses. Additionally, legislation to create new Congressional agencies responsible for providing non-partisan scientific and technical advice has been introduced. In June 2004, Congressman Holt introduced H.R. 4670, which would build upon the pilot project at GAO by establishing within GAO a Center for Scientific and Technical Assessment. (That bill has not been reintroduced.) The Center would be dedicated to providing Congress with information, analysis, and advice on issues related to science and technology. In the Senate, Senator John Kerry introduced S. 1716 in 2001, in which Section 153 created a Science and Technology Assessment Service to provide ongoing independent science and technology advice "... within ... the legislative branch." Assessments would have been conducted using experts selected in consultation with the National Academy of Sciences.

Science and Technology Advice for Congress, a collection of essays by various authors, analyzes a number of potential means for expanding the scientific and technical assessment capability for the Legislative Branch. In addition to legislating mandating the creation of a dedicated Congressional support office in this area, authors representing groups such as AAAS, NAS, and various universities suggest improving the access to and responsiveness of private organizations capable of providing expert advice. One recommendation is to establish a cadre of private organizations who are prepared to quickly respond to questions distributed by a central office in Congress with knowledge of their areas of expertise. Another suggestion involves expanding the role of privately-sponsored Congressional science fellows by increasing the number of fellows available for employment in Congressional offices and better preparing them to deal with policy issues that arise in these positions. The editors, Morgan and Peha, note that "any analysis process must continuously work to build widespread support among members on a bipartisan, bicameral basis, so that when conflicts arise...support for the analysis institution remains firm."⁴

7. Questions for the Witnesses

- What resources are available to Congress to provide scientific and technical advice or assessments? How does Congress use these resources?
- What are the strengths and weaknesses of the current system through which Congress receives scientific and technical advice, particularly with regard to depth and breadth, timeliness, and impartiality? Overall, does the current system effectively meet Congress' needs, or does a significant gap exist?
- What options are available to supplement or improve existing resources to provide assessments and advice on scientific or technical issues?

⁴ Morgan and Peha, 103.